



Figure 1

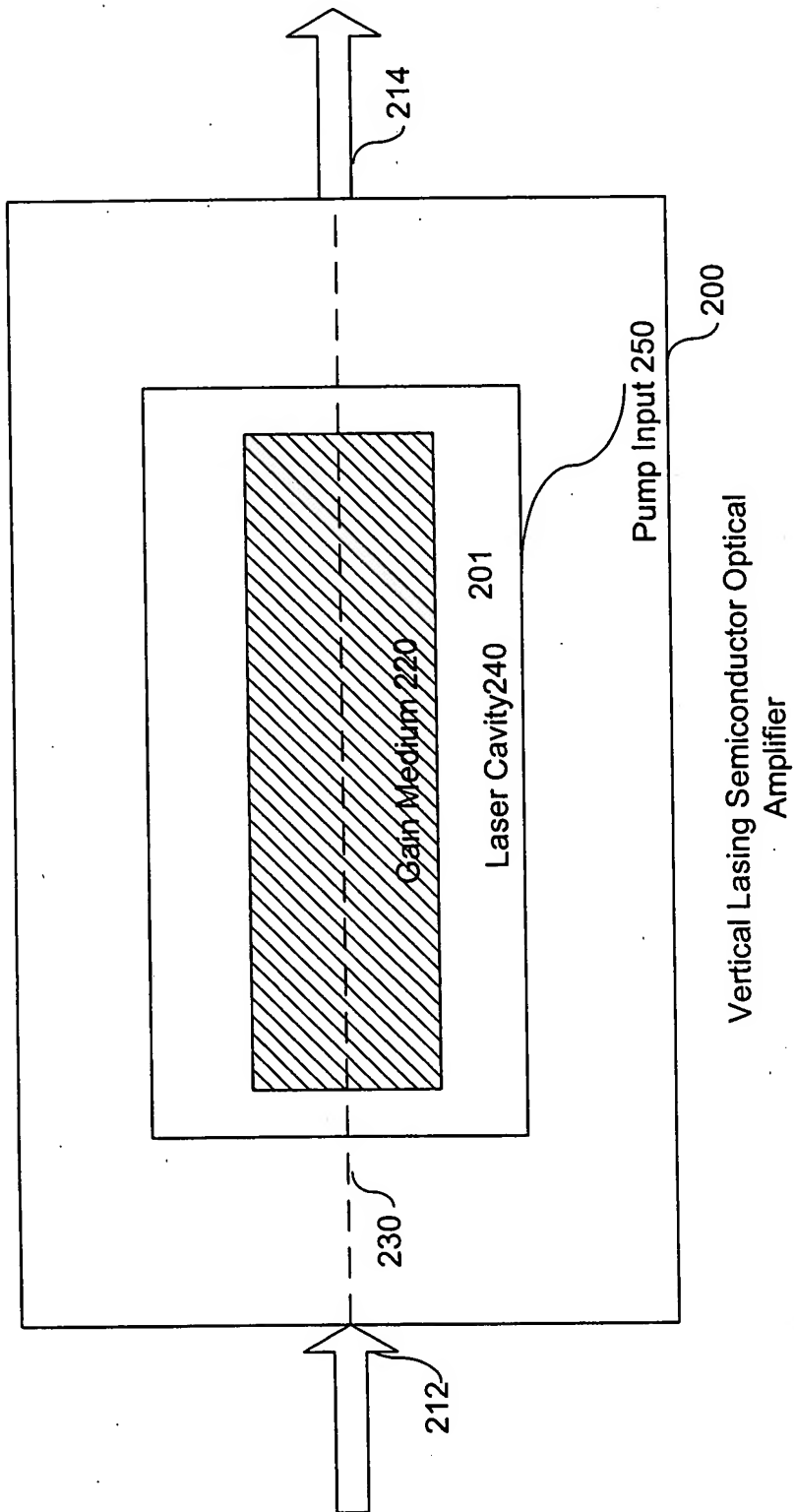


Figure 2

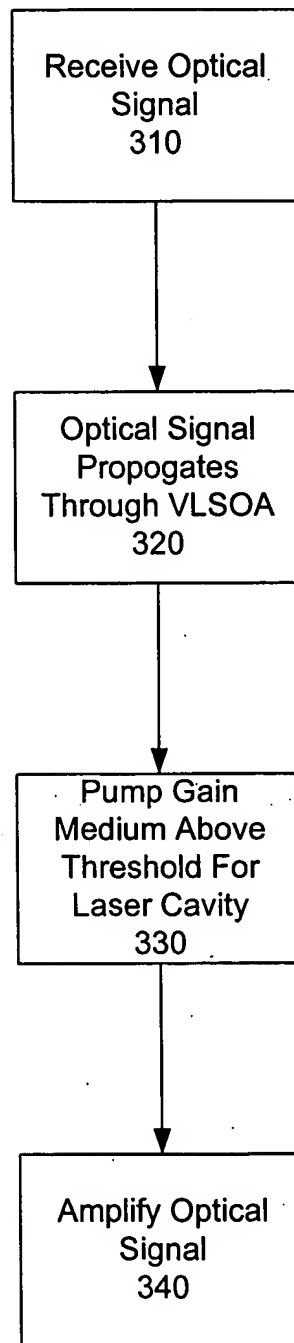


Figure 3

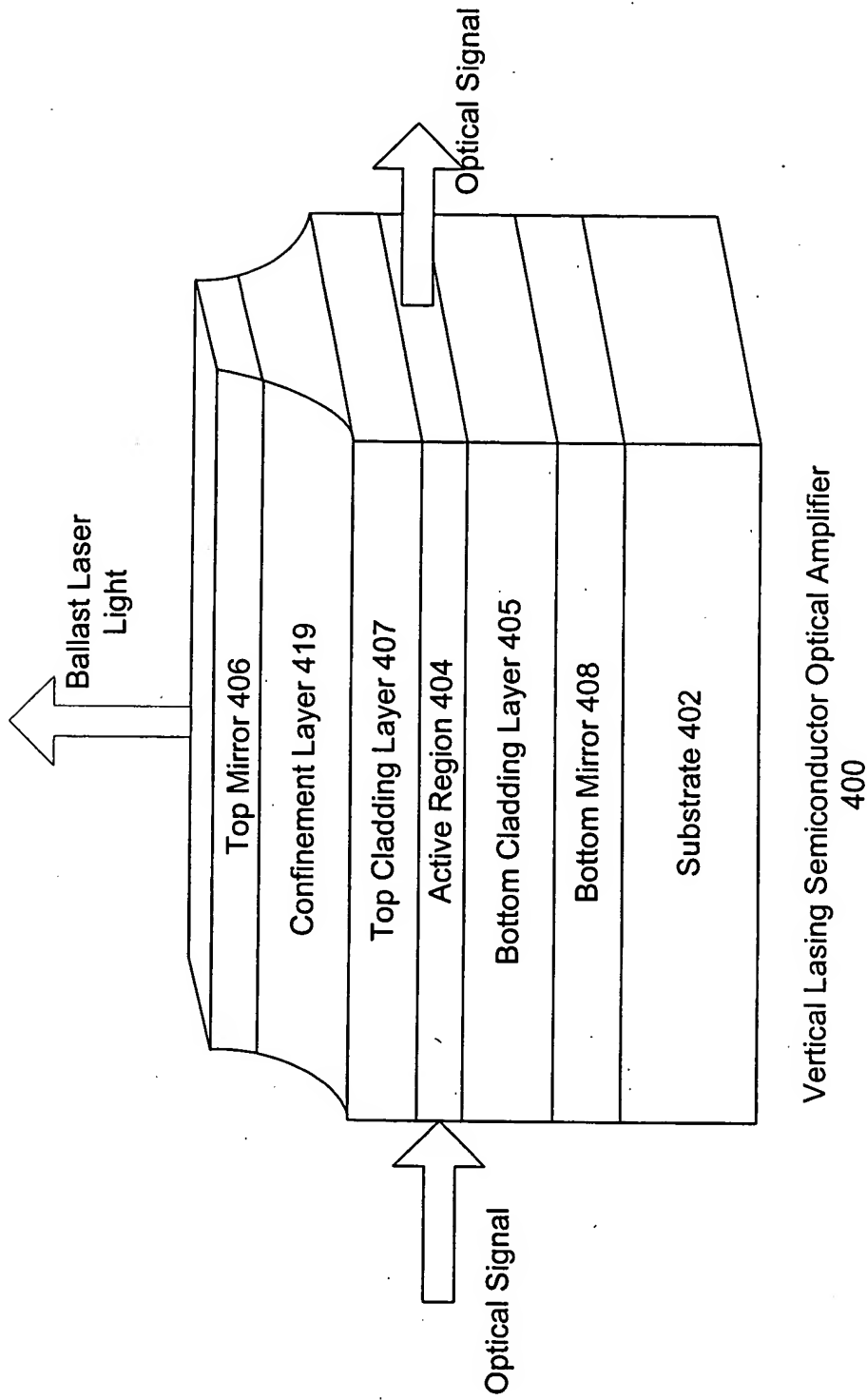
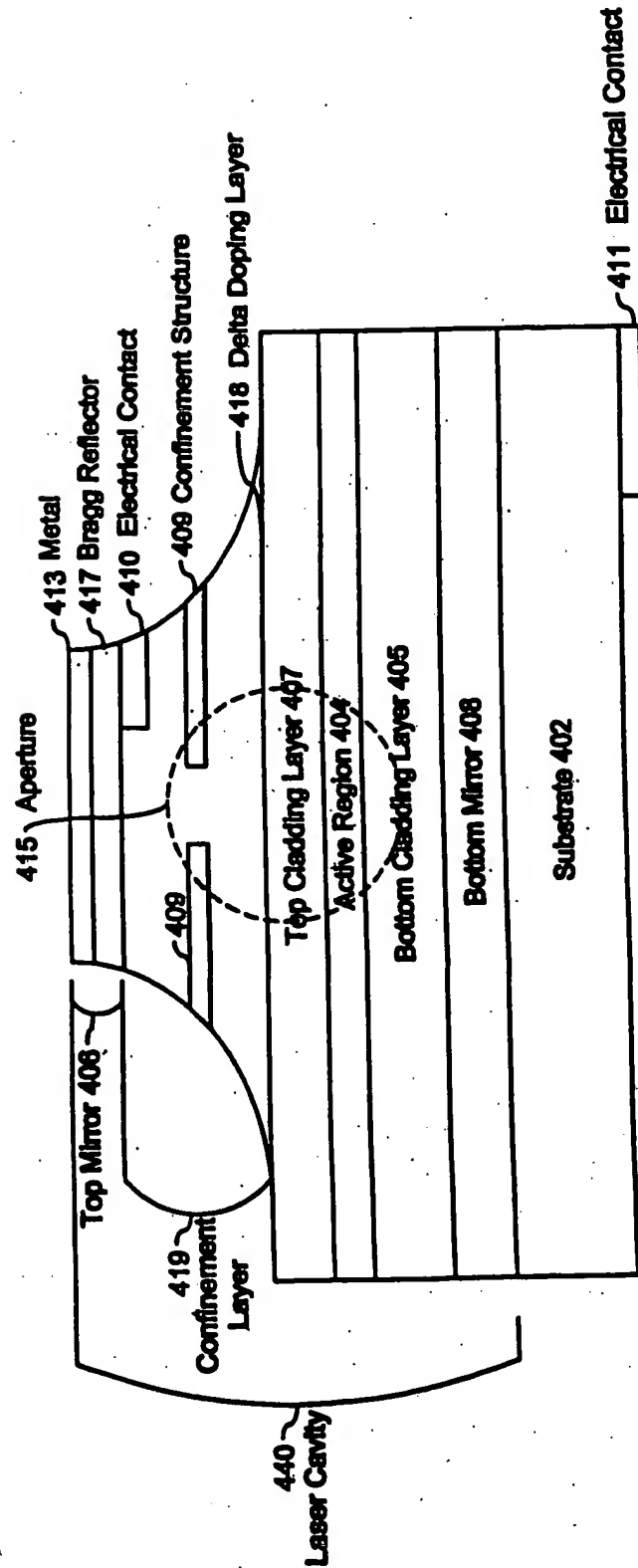


Figure 4A



Vertical Lasing Semiconductor Optical Amplifier 400

Figure 4B

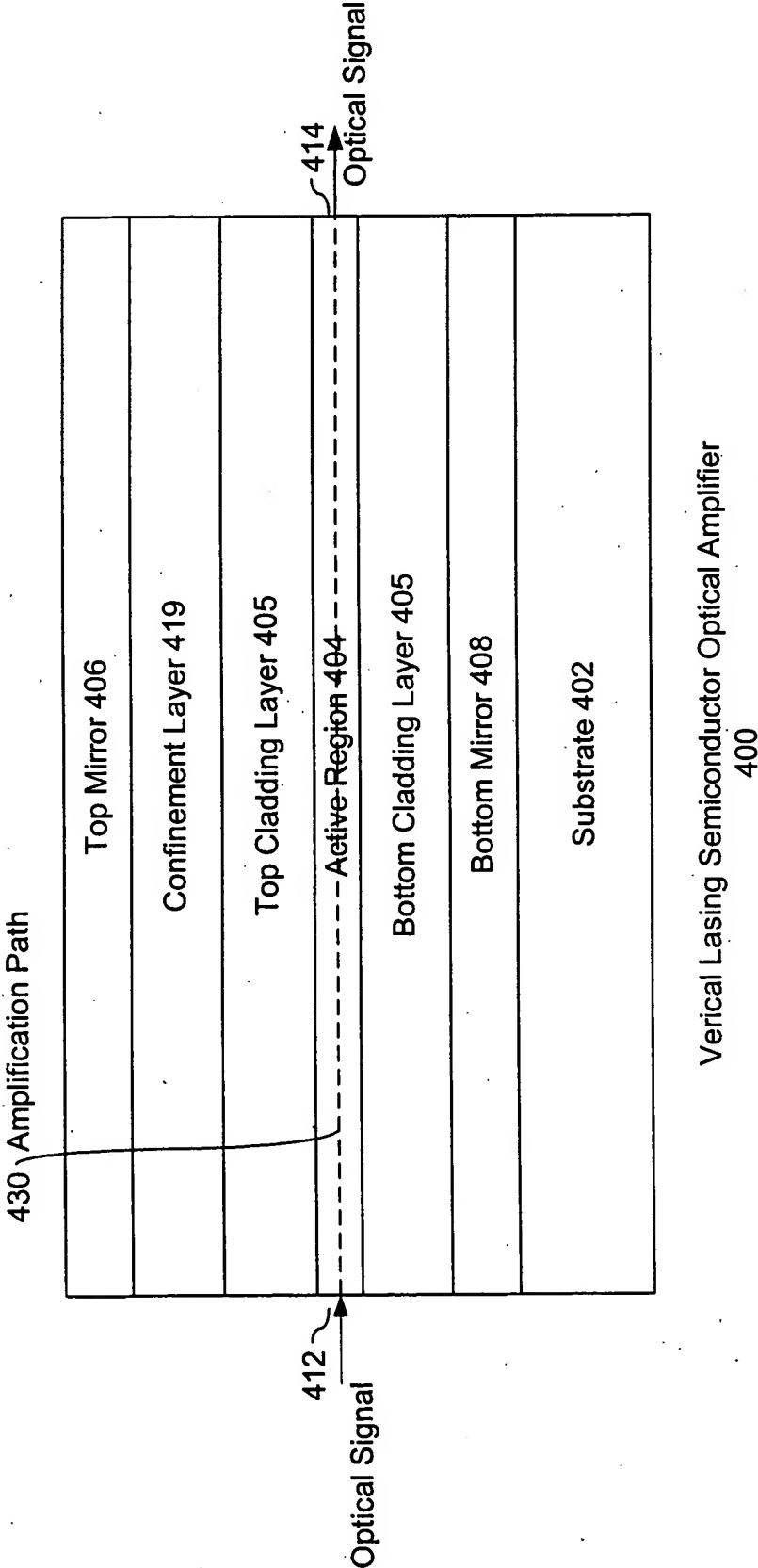
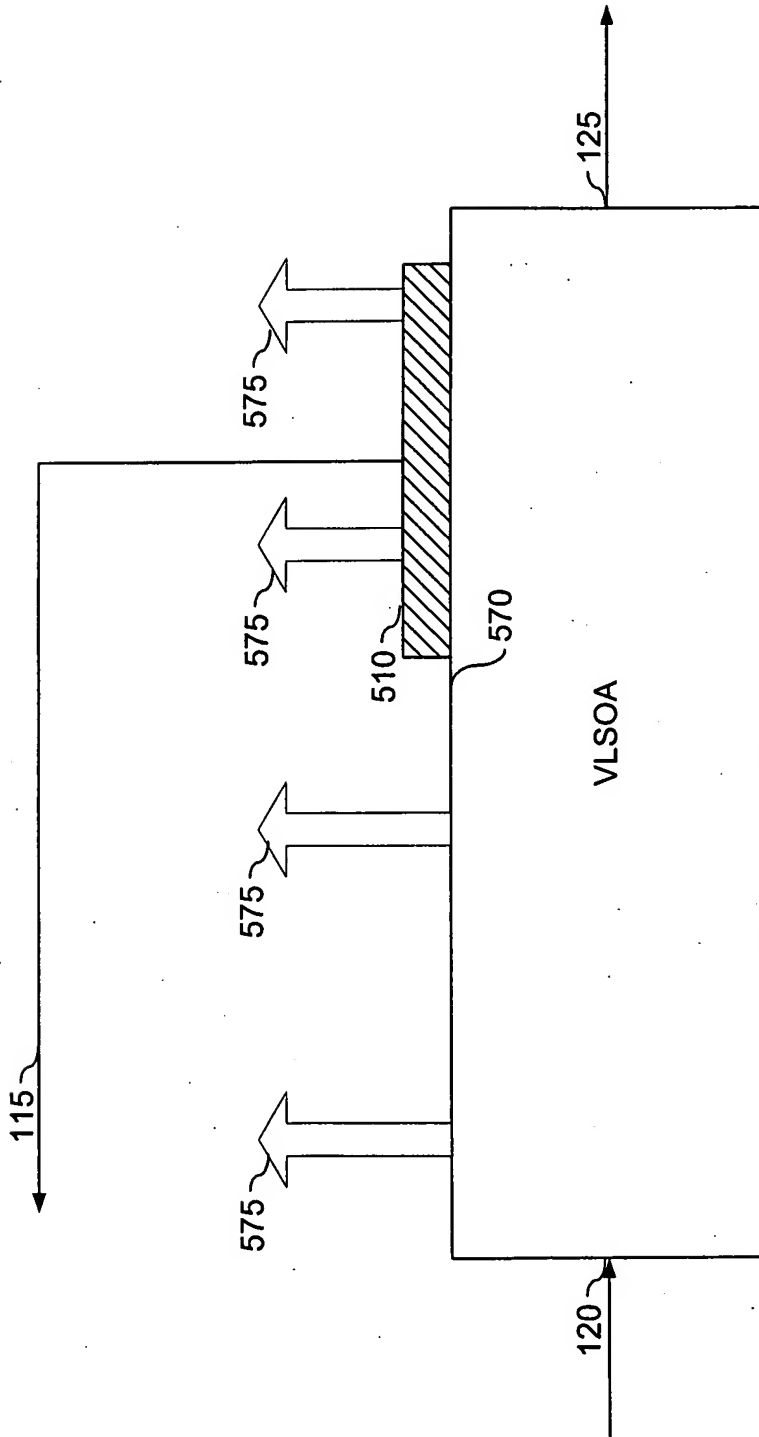
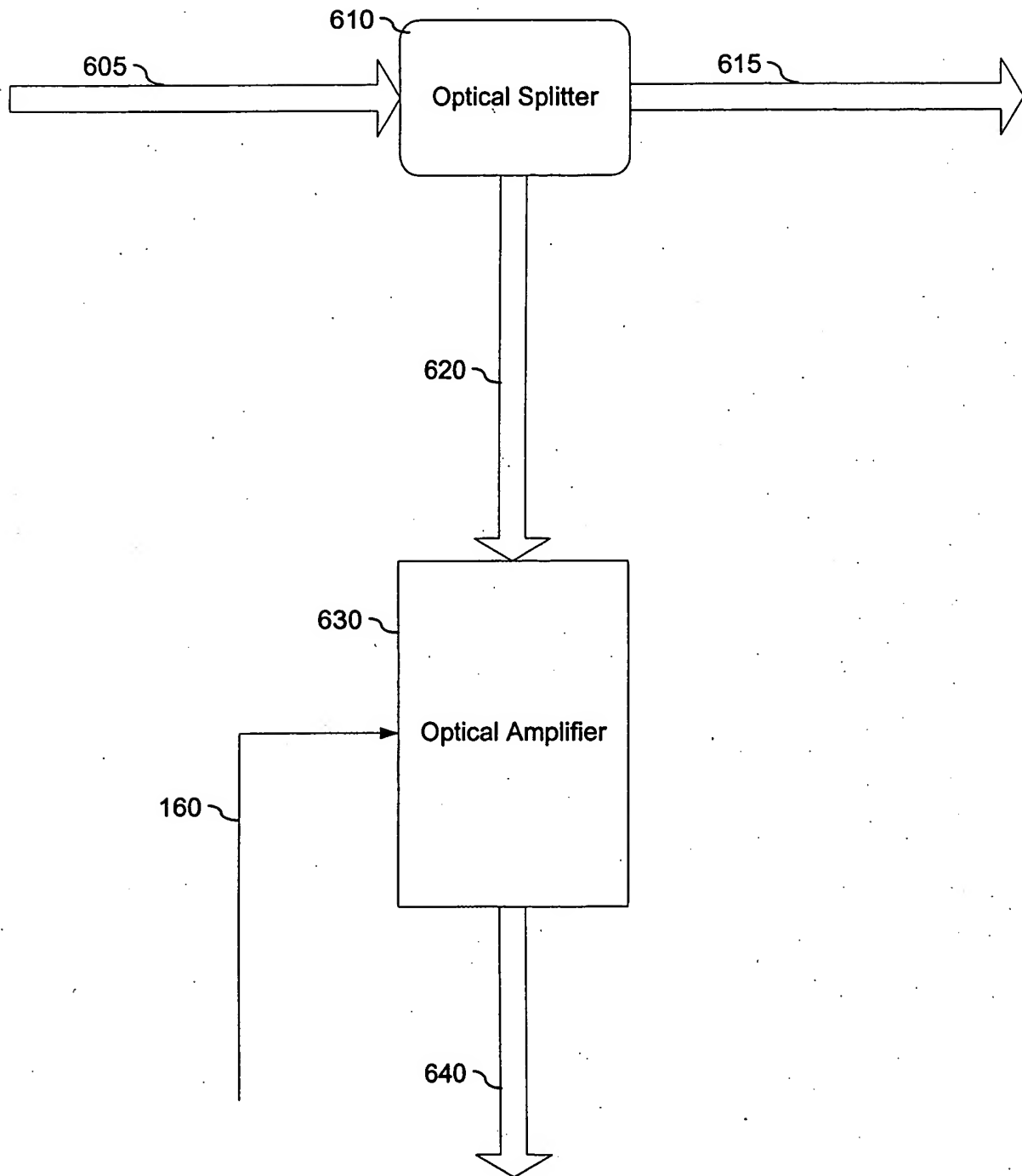


Figure 4C



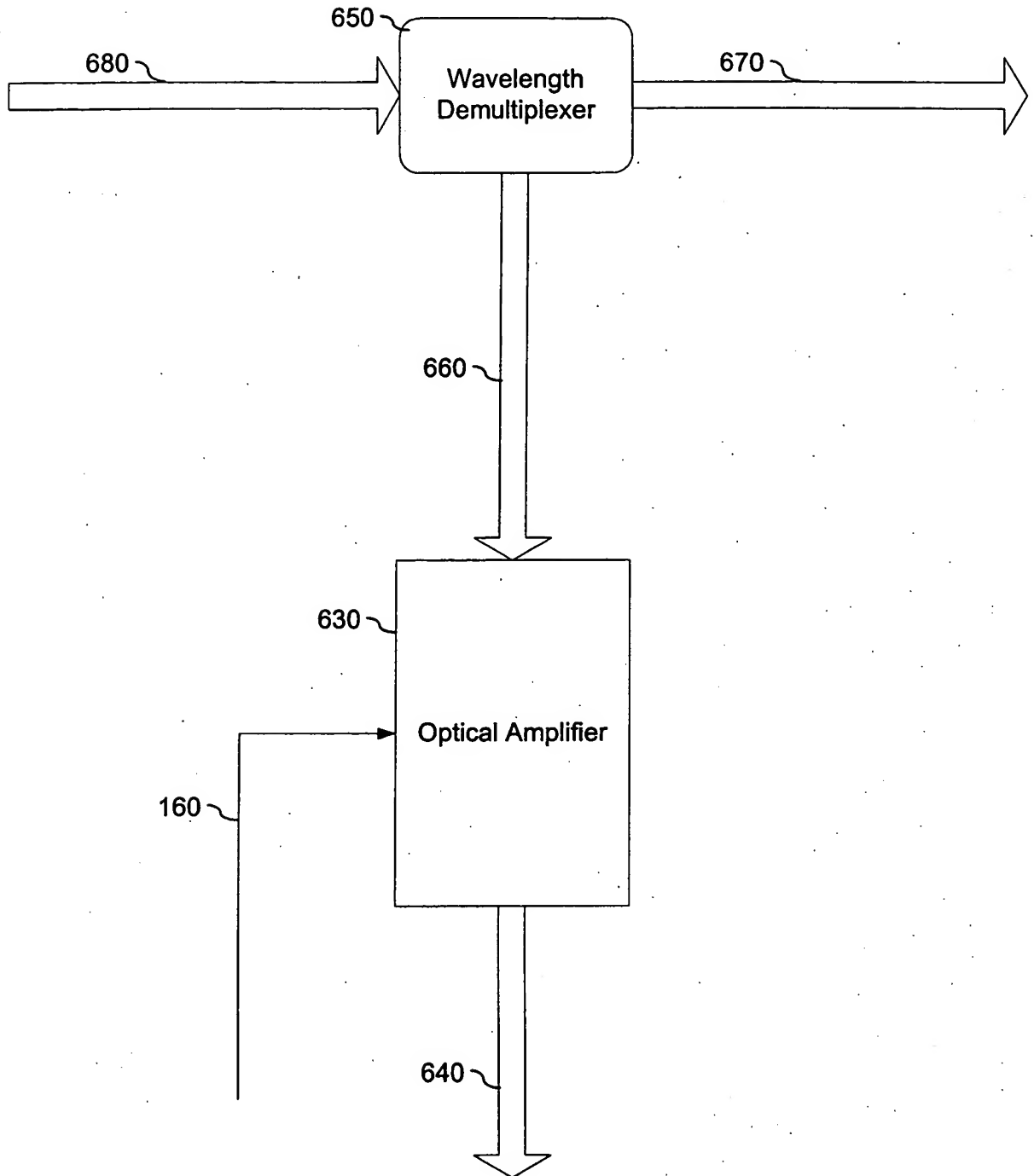
Vertical Lasing Semiconductor Optical Amplifier
500

Figure 5



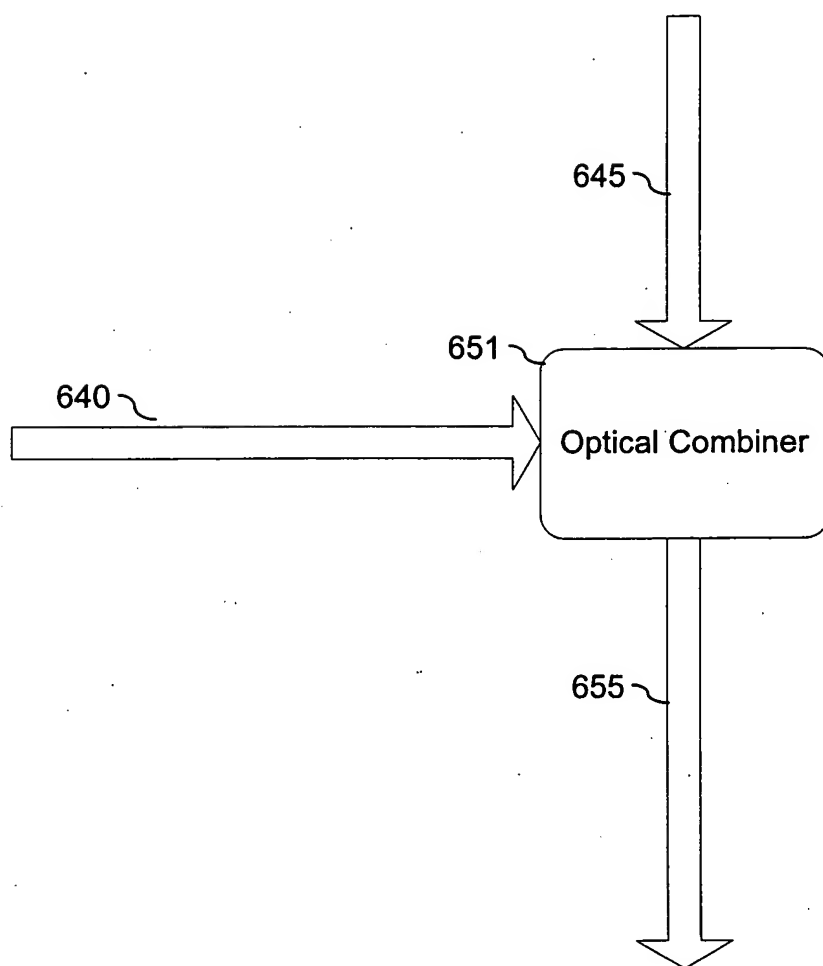
Optical Routing Node 170

Figure 6A



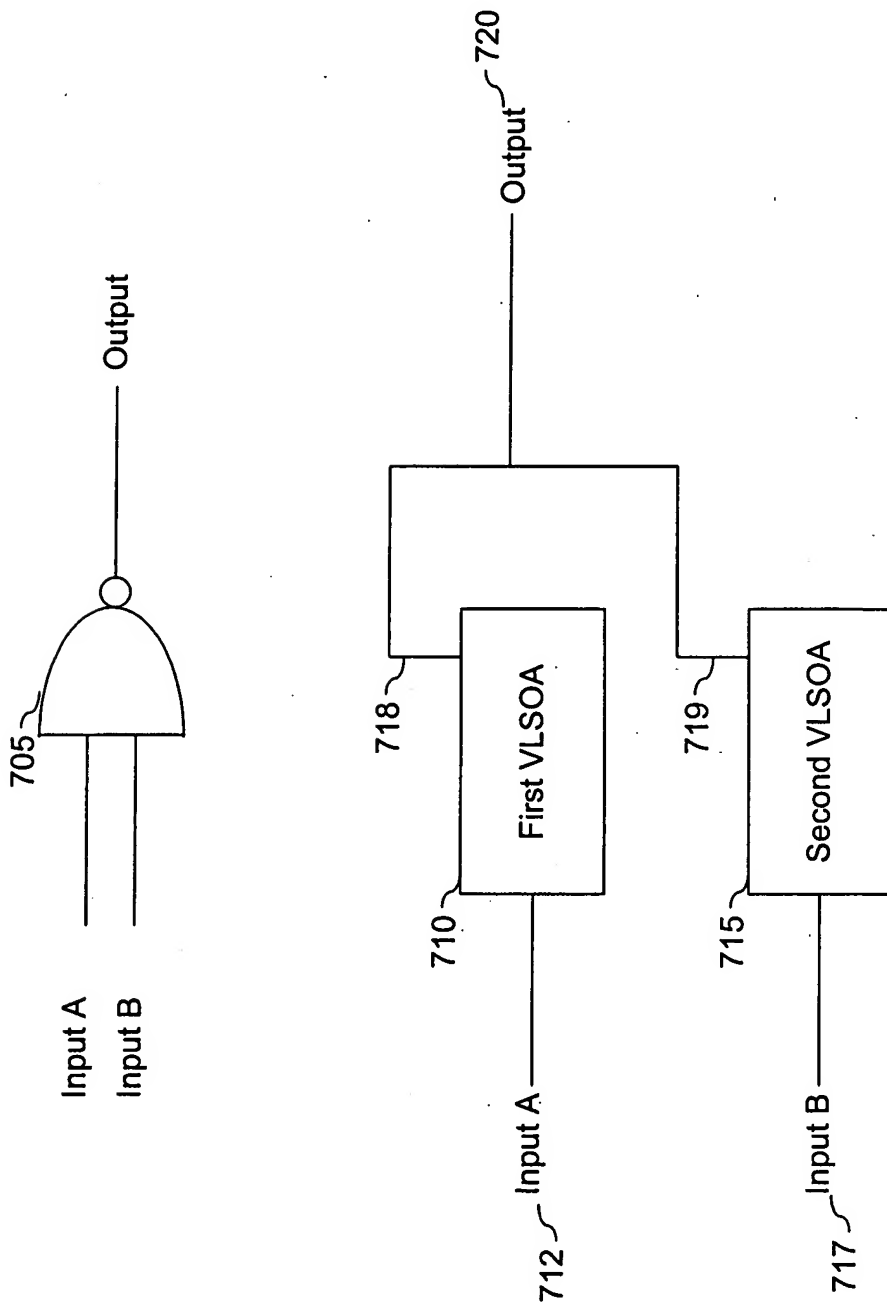
Optical Routing Node 170

Figure 6B



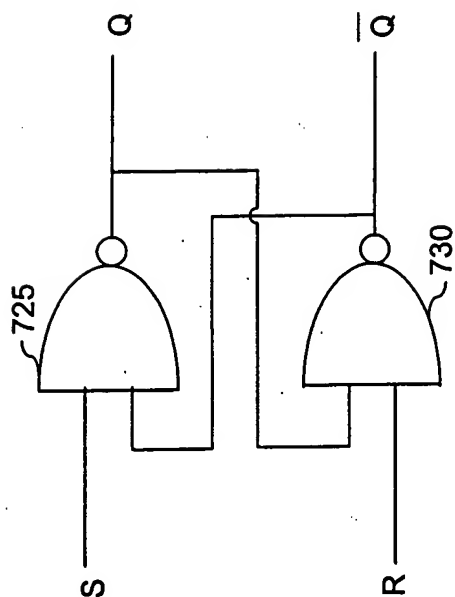
Optical Combiner 151

Figure 6C



Optical NAND Gate 700

Figure 7A



722

S	R	Q	Q̄	
0	0	1	1	Not Used
0	1	0	1	
1	0	1	0	
1	1	0	1	Memory State
		1	0	

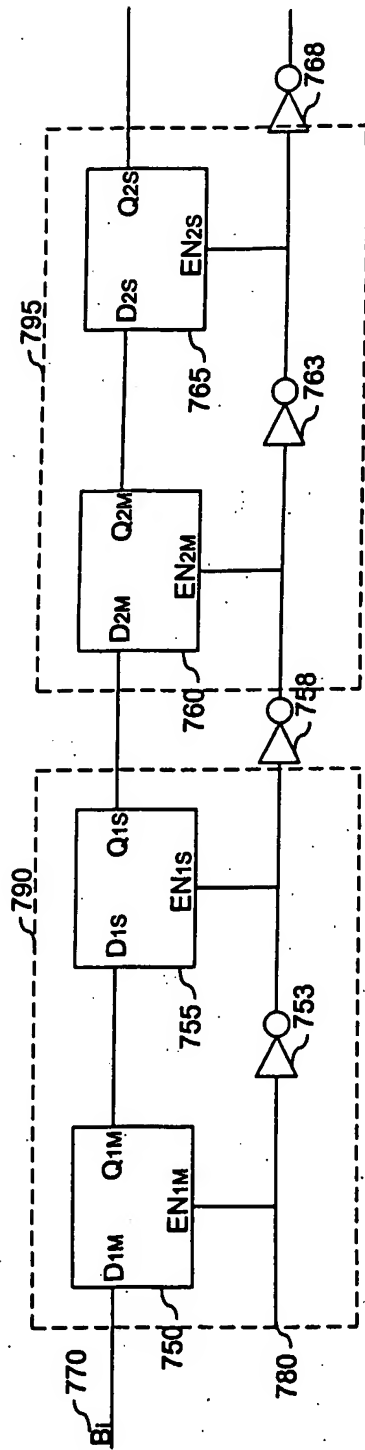
Optical Flip-Flop

Figure 7B



D	Enable	Q	Q
0	0	Memory State	
1	0	Memory State	
0	1	0	1
1	1	1	0

Optical Buffer Element
Figure 7C



775

Control	D1M	Q1M	Q1S	Q2M	Q2S
1	B1	B1			
0		B1	B1		
1	B2	B2	B1	B1	
0		B2	B2	B1	B1

Buffer Array
Figure 7D

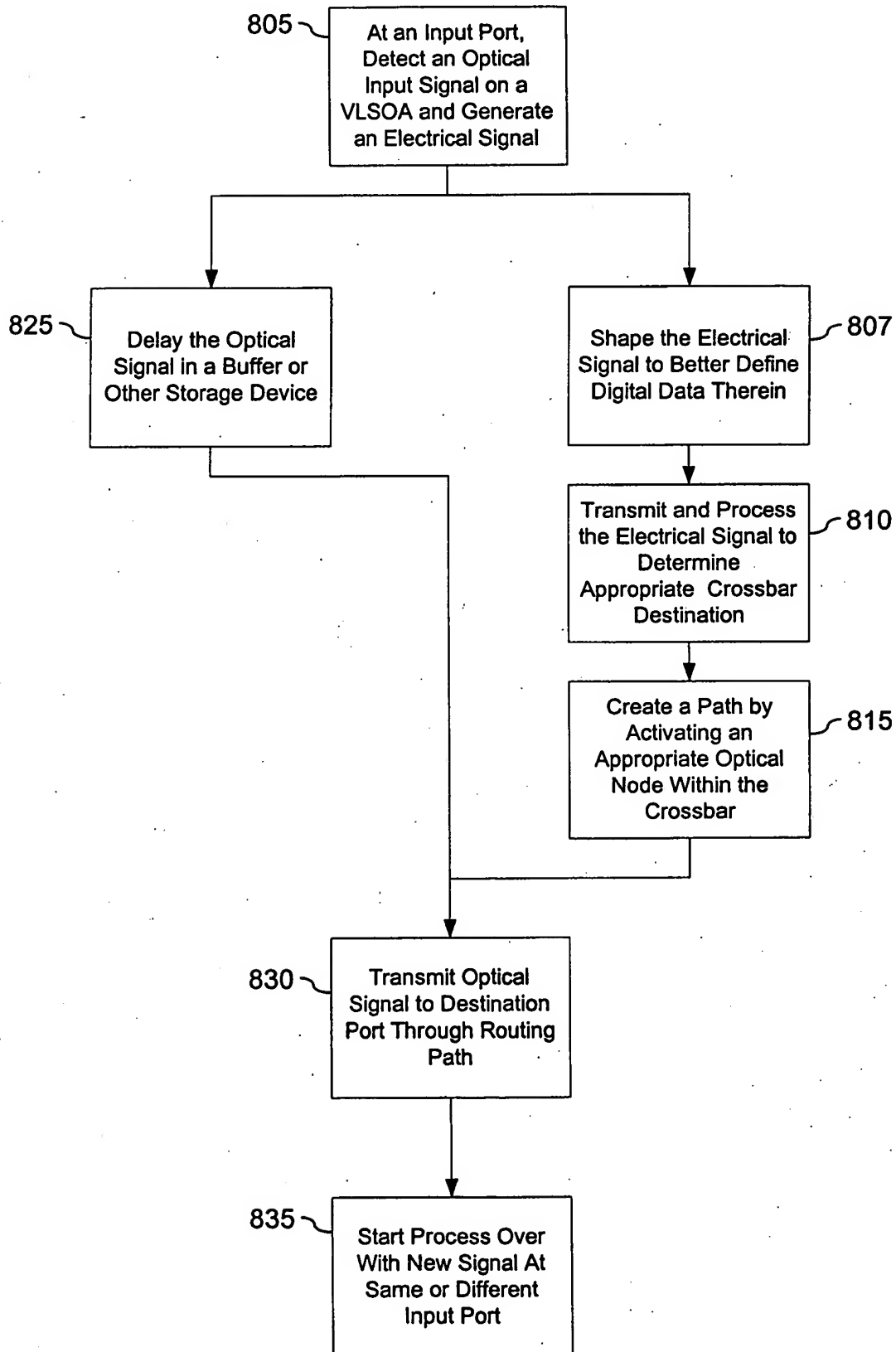


Figure 8